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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,420	09/05/2003	Hongjian Gan	DEE-PT128	7560
3624	7590	11/30/2005	EXAMINER	
VOLPE AND KOENIG, P.C. UNITED PLAZA, SUITE 1600 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103			SHINGLETON, MICHAEL B	
			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 11/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/656,420

Applicant(s)

GAN ET AL.

Examiner

Michael B. Shingleton

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 1-4 and 10-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-9 and 14-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

The drawing corrections submitted 9-19-2005 have been approved by the examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-9 and 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baldwin et al. 6,608,521 (Baldwin) in view of Ben-Yaakov et al. 6,728,121 (Ben).

Baldwin discloses a ramp signal generator and ramp signal generation method having a ramp generator that generates a ramp signal formed from timing capacitor C_{T1} that is charged and discharged via two current sources I_{C1} and I_{D2} . In one interpretation of the claims the output Q and \bar{Q} of the flip-flop 28 forms a "error-amplified voltage" that forms a feedback loop with the timing capacitor and controls the magnitude of the two current sources I_{C1} and I_{D2} by turning of these current sources on and off. This is just giving the broadest reasonable interpretation to the claims (See MPEP 2111). Note that the ramp generator and method for ramp generation is for use in the generation of a PWM signal (See at least column 1 around line 55 of Baldwin). Another interpretation of Baldwin as it relates to the claims is that Baldwin clearly discloses that both the slope of the charge cycle and the slope of the discharge cycle can be controlled by the voltage across the two resistors R_{T1} and D_{T1} (See column 2 around line 10 of Baldwin that states that " R_{T1} is used to set the reference charge current" and " D_{T1} sets the discharge current"). Here Baldwin discloses that the ramp generator/method for ramp generation is for a switch mode regulator (See column 1, around line 7 of Baldwin), but Baldwin is silent on the exact type of switch mode regulator this generator/pwm structure is to be used in. (Capacitor C_{T1} still forms a timing capacitor that is charged and discharged via two current sources I_{C1} and I_{D2} .) Thus this interpretation lacks the use of a feedback loop to control the charging and discharging of the ramp waveform, i.e. Baldwin lacks the sensing of the output to control the slope(s) of the ramp waveform to form an error

signal that controls the magnitude of the two current sources noted above. Clearly Baldwin is a component of a large switch mode regulator system.

Ben discloses one well known conventional switch mode regulator system that employs a pwm arrangement/method that the output of the power circuit can be sensed and compared to a set value and this in turn generates a error-amplified voltage V_e that is used to control the slope(s) of a ramp generator whose output is applied to a comparator COMP1. The output of the comparator would then form the pwm signal that is feedback to the power circuit and the output of the power circuit is then feedback to the means to control the slope of the ramp generator thus completing the loop (See Figures 3 and 4 and note the last ten or so lines of column 3 and the first 49 lines of column 4 of Ben). This allows for the output voltage V_o of a power circuit to be regulated.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the arrangement of Baldwin in a power circuit, i.e. switch mode regulator, that controls the slope of the ramp generator because as the Baldwin reference is silent on the exact structure of the switch mode regulator used with the ramp generator/pwm structure one of ordinary skill in the art would have been motivated to use any art-recognized equivalent switch mode regulator system including a switch mode regulator that senses the output of the switch mode regulator and then compares this output to a reference value to generate a error-amplified voltage to control the magnitude of the current source(s) so as to control the PWM waveform output from a comparator that in turn controls the output voltage like that or similar to that shown by Ben. To control both current sources would have been an obvious consequence of the combination made obvious above. Note that in the combination above the comparator structures 58 and 60 in combination with the R/S flip flop 62 would form a PWM comparator who's output "Q" would be a pwm signal.

Both Ben and Baldwin are silent on calling the PWM comparator a "hysteretic comparator", however, since this is the same structure i.e. the two comparators having the inverting of one 58 connected to the non-inverting input terminal of the other and the other input terminals connected to a high and low reference voltages this structure of Ben and Baldwin can be called a "hysteretic comparator" just like that of applicant's. Note that this is giving the broadest reasonable interpretation to the claims (See MPEP 2111).

Applicant's arguments with respect to claims of record have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael B. Shingleton whose telephone number is (571) 272-1770.

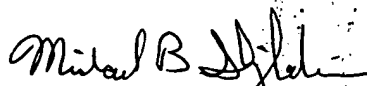
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal, can be reached on (571)272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306 and after July 15, 2005 the fax number will be 571-273-8300. Note that old fax number (703-872-9306) will be service until September 15, 2005.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MBS

November 25, 2005



Michael B Shingleton
Primary Examiner
Group Art Unit 2817

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